AMENDMENTS TO THE SPECIFICATION

For the Examiner's convenience, all pending locations in the Specification are set forth below and have been amended where noted:

Please amend the heading preceding paragraph [0010] as follows:

BRIEF DESCRIPTION OF THE DRAWING[[S]]

Please amend paragraph [0010] as follows:

[0010] The Figure ~~FIG. 1~~ is a simplified schematic process flow diagram of the ATR-reforming exchanger process according to one embodiment of the invention.

Please amend paragraph [0011] as follows:

[0011] One embodiment of a process according to the present invention has the general configuration shown in the Figure ~~FIG. 1~~. Desulfurized natural gas or other hydrocarbon supplied from line 2 is mixed with process steam from line 4 and the mixture is preheated in a feed preheat exchanger 6. The steam to carbon ratio of the mixture is desirably from 2.0 to 4.0, e.g. about 3. A first portion of the preheated steam-hydrocarbon mixture is fed via line 8 to the burner in autothermal reformer (ATR) 10, and a second portion is supplied via line 12 to the tube-side inlet of reforming exchanger 14. If desired, additional steam can be added via line 36 to line 8.

Please amend paragraph [0016] and Table 1 as follows:

[0016] The present invention is illustrated by way of an example. A reforming exchanger installed with an ATR as in the Figure ~~FIG. 1~~ where air is used in place of oxygen for 50 MMSCFD hydrogen production has a total absorbed duty in the fired process heater of 38.94 Gcal/hr, and has the associated parameters shown in Table 1 below:

Table 1. ATR-Reforming Exchanger Process with Excess Air

Stream ID:	Catalyst tube inlet, line 12	ATR feed, line 8	ATR effluent, line 22	Shell-side outlet, line 26	Air-steam to ATR, line 20
Dry Mole Fraction					
H2	0.0200	0.0200	0.3578	0.4492	
N2	0.0190	0.0190	0.4628	0.3561	0.7804
CH4	0.9118	0.9118	0.0013	0.0036	
AR	0.0000	0.0000	0.0055	0.0042	0.9400
CO	0.0000	0.0000	0.0835	0.1026	
CO2	0.0000	0.0000	0.0891	0.0843	0.0300
O2	0.0000	0.0000	0.0000	0.0000	0.2099
C2H6	0.0490	0.0490	0.0000	0.0000	
C3H8	0.0002	0.0002	0.0000	0.0000	
Total Flow KMOL/HR (dry)	312.6	713.9	4154.2	5414.7	2446.2
H2O	947.7	2164.0	2827.0	3380.6	728.9

KMOL/HR					
Total Flow KMOL/HR	1260.3	2878.0	6981.2	8795.3	3175.1
Total Flow KG/HR	22288	50896	134887	156700	83990
Pressure (kg/cm2 abs)	25.9	25.9	22.4	22.1	24.0
Temperature (°C)	601	601	1011	747	621

Please amend paragraph [0018] and Table 2 as follows:

[0018] As another example, a reforming exchanger is installed with an ATR as shown in the Figure ~~FIG. 1~~ wherein air is used as the oxygen source, for a 50 MMSCFD hydrogen production. Typical pressures and temperatures are indicated in the Figure ~~FIG. 1~~ for this example, and other associated parameters are shown in Table 2 below:

Table 2. ATR-Reforming Exchanger Process with Excess Air Oxidant

Stream ID:	Catalyst tube inlet 12	ATR feed line 8	ATR effluent, line 22	Shell-side outlet, line 26	Air-steam to ATR, line 20
Dry Mole Fraction					
H2	0.0200	0.0200	0.4115	0.4792	
N2	0.0023	0.0023	0.4020	0.3089	0.7804
CH4	0.9612	0.9612	0.0026	0.0227	

AR	0.0000	0.0000	0.0048	0.0037	0.0094
CO	0.0000	0.0000	0.0803	0.0875	
CO2	0.0150	0.0150	0.0987	0.0980	0.0003
O2	0.0000	0.0000	0.0000	0.0000	0.2099
C2H6	0.0013	0.0013	0.0000	0.0000	
C3H8	0.0002	0.0002	0.0000	0.0000	
Total Flow KMOL/HR (dry)	371.5	754.3	4069.7	5299.5	2094.1
H2O KMOL/HR	1074.8	2182.2	2610.9	3325.1	656.2
Total Flow KMOL/HR	1446.3	2936.5	6680.5	8624.6	2750.3
Total Flow KG/HR	25395	51557	124039	149434	72482
Pressure (kg/cm2 abs)	25.5	23.6	22.8	22.5	23.6
Temperature (°C)	601	601	884	659	621

Please amend paragraph [0019] as follows:

[0019] The data in Table 2 are also for an example that represents low capital cost, low energy consumption, easy operation, and reduced NOx and CO2 emissions. The effluent recovered from the reforming exchanger includes 47.9% H2, 30.9% N2, 8.8% CO, and 9.9% CO2. The reforming exchanger effluent undergoes shift conversion, as shown in the Figure ~~FIG. 1~~, resulting in an effluent having a composition of 51.9% H2, 28.6% N2, 0.5% CO, and 16.6% CO2. Purification by PSA results in a purified product having a composition of 98.0% H2, 0.80% N2, and 1.0% CH4.

Applicant believes that no new matter has been added with these amendments.